

Institution: Newcastle University
Unit of Assessment: 17b Geography
<p>a. Overview</p> <p>Geography, with 27.2 FTE, is part of the School of Geography, Politics and Sociology (GPS) and includes the <i>Centre for Urban and Regional Development Studies</i> (CURDS), a University-designated Research Centre. Our research is organised through four clusters: <i>Physical Geography</i> (PG), <i>Economic Geographies</i> (EG), <i>Geographies of Social Change</i> (GSC) and <i>Power, Space, Politics</i> (PSP).</p>
<p>b. Research strategy</p> <p>Our strategic objectives are to: provide intellectual leadership and set research agendas in the discipline building upon our core strengths; develop collaborations and engagement with research users that inform our research priorities and approaches and translate geographical research for diverse audiences; establish geographical scholarship – across different scales and parts of the globe – through research agendas in the social and natural sciences and humanities such that geographical contributions to wider debates and issues can realise their potential; undertake research that has genuine, beneficial and lasting impact; and sustain a positive and supportive research culture. Our strategy is delivered primarily through our research clusters, which are permeable and dynamic, with some staff working across clusters. Major achievements in this review period include updating the radiocarbon calibration curve, developing an evolutionary geographical political economy, introducing postcolonial theory into economic geography and extending understandings of militarism and military activities. We have significantly increased our spend from competitive RCUK sources (>£2.4m, equivalent to 63.8% of spend compared with 18.7% in RAE2008) and increased our PGR completions from 5.15 to over 6 FTE per annum (+16%). Marshall has co-ordinated and led successful bids for the ESRC funded North East Doctoral Training Centre and the AHRC funded Northern Bridge Doctoral Training Partnership. Our long-held commitment to impact and engagement work is both distinctive and increasingly recognised (e.g. Goddard's Lord Dearing Lifetime Achievement Award for Higher Education and the Regional Studies Association's inaugural Institutional Award to CURDS). Significant achievements and future plans for our clusters are set out below.</p> <p>Physical Geography (PG) Henderson, Juggins, Maddy, Mériaux, Nakagawa, Pearson, Ross, Russell, Yamazaki</p> <p>Research within Physical Geography continues to be at the forefront of national and international research agendas on climate change, ice sheet and glacier dynamics, tectonically active landscapes, and water quality. Embedded in our research is the proactive development and refinement of innovative methodological approaches. Particular highlights include our pioneering Lake Suigetsu project, where Nakagawa has established a record of atmospheric radiocarbon content over the last 52,800 years. This has been integrated into INTCAL13 to extend the radiocarbon calibration curve back to 52,800 years ago, the limit of this chronological method; and Ross's use of new large-scale radio-echo sounding data from the West Antarctic Ice Sheet (WAIS), which demonstrates its increasing vulnerability to climate change and its potential to contribute 0.5 – 1 m to global sea level rise.</p> <p>Our Palaeoclimatological research reconstructs Quaternary climate on orbital and sub-orbital timescales using a range of microfossil, isotopic and biomarker indicators. We have also pioneered numerical analysis of palaeoecological data, and modelling of past climate using ensemble general circulation models (GCM). A particular focus of palaeoclimate reconstructions is on the Asian monsoon system, where Nakagawa and Henderson use lake sediment sequences (from Japan and the Tibetan Plateau, respectively) to understand the response of the monsoon to Quaternary climate changes. In addition, Pearson has been developing the application of novel organic biomarkers to lake sediments and has been instrumental in the calibration of glycerol dialkyl glycerol tetraethers (GDGTs) as quantitative indicators of temperature, and the use of alkenones as salinity and temperature proxies. In an isotope systematics study, Henderson established the importance of precipitation on the hydrogen isotope composition of terrestrial plant leaf waxes. Juggins pioneered a range of new methods and techniques to analyse palaeoecological datasets to infer past environmental change, which have improved the application of biologically based</p>

quantitative reconstructions. His bespoke C2 software, developed from this research is now used for the analysis of palaeoecological data in over 250 laboratories worldwide. **Yamazaki** was part of the team that designed and implemented the BBC Climate Change Experiment (*ClimatePrediction.net*), which demonstrated that the upper boundary of future temperature is much higher than previously estimated. **Yamazaki** has been instrumental in the development of GCM ensembles, especially the application of flux adjustments and parallel computing.

Research on cryospheric systems aims to link modern landscape observation with glacial process-driven research. **Ross** was the first to identify the vulnerability of the Weddell Sea sector of the WAIS to future ice sheet retreat using radio-echo sounding data. The novel analysis of ice shelf features has led to the identification of a large-scale channelized drainage system beneath the WAIS. Coupled to modern ice dynamics of the central WAIS, **Ross** has also established the first constraints on its Holocene flow regime. Other work has focused on understanding geomorphological changes in modern ice-marginal environments by **Russell**, especially jökulhlaup-driven esker formation and proglacial sedimentary successions. As a result, new models of the genesis of ice-proximal landforms, particularly driven by jökulhlaups, has led to a greater understanding of the controls on jökulhlaup hydrograph shape, and associated downstream modification. During a NERC Urgency Grant, **Russell** and **Mériaux** were able to test these models by undertaking the first detailed survey of the geomorphological impact of a suite of jökulhlaups generated during a single eruption at Eyjafjallajökull, Iceland.

In landscape evolution research **Mériaux** has determined the Holocene slip-rate of the Altyn Tagh Fault, and the postglacial slip-rate of the Denali Fault (two of Earth's largest) by taking an innovative approach using cosmogenic radionuclide dating, as well as mapping the tectonic activity emanating from the southern Dead Sea Fault. Data generated from our state-of-the art cosmogenic isotope facility was also used to constrain the timing and geological setting of *Australopithecus sibeda* in southern Africa and the landscape evolution of the northern Iceland ice sheet since deglaciation. Work on fluvial landscape evolution by **Maddy** has improved our understanding of the roles of neotectonics and orbitally-forced climate changes on the long term hydrology of western Turkey. **Maddy** has also developed a novel palaeodischarge time series, in order to model the longitudinal profile development of the Thames over the last 400 ka BP.

Our research on water quality includes **Juggins'** novel use of diatom data and innovative numerical methods to develop new methodologies and software for assessing the ecological status of UK lakes and rivers. These tools are currently used by all UK Water Agencies to meet their statutory obligations under the EU Water Framework Directive (see Impact Case Study).

Economic Geographies (EG) Champion, Coombes, Dawley, Goddard, Hughes, Laurie, Mackinnon, Marshall, Pike, Pollard, Stenning

Cohering around CURDS, this cluster is a vibrant international hub of scholarship and capacity building in economic geography. A core concern of the cluster is to use heterodox economic and social theories to challenge accepted orthodoxies and to advance understanding of persistent unevenness and inequality at a variety of spatial scales. We are known for our ability to engage rapidly with economic change and as such financial crisis, recession and the context of rising powers in different parts of the globe have influenced our research in this review period. One core area of our work is understanding governance issues; we view these as fundamental to the (re)production of unevenness and inequality and we are at the forefront of developing agendas in this area (e.g. **Pike et al.**'s multi award-winning *Handbook of Local and Regional Development*, Routledge 2011). Supported by ESRC/BIS/Welsh Assembly/CLG's *Spatial Economics Research Centre (SERC)*, **Pike** has conceptualised and documented how different states and institutions shape governance pathways while **Goddard** has developed the internationally accepted blueprint for how universities can support city and regional economic growth (*The University and the City*, Routledge, London). A second theme is the socio-cultural construction of institutions and markets, including branding (**Pike**), ethics in value chains (**Hughes**) and financial markets (**Pollard**). **Hughes, Laurie, Pollard** and **Stenning** have pioneered the introduction of postcolonial theory into economic geography in a suite of papers and edited collections (e.g. *Postcolonial Economies*, Zed 2011). Research on commodity chains and sustainability (**Hughes**), neoliberalization (**Laurie**

Environment template (REF5)

167365) and Islamic finance (**Pollard**) has challenged the economic geography/development studies boundary, complementing work of colleagues in the *Power, Space, Politics* cluster. A third theme seeks to increase the theoretical, empirical and political attention devoted to finance in economic geography and beyond. Since the 2008 crisis, we have defined and led agendas to understand the geographically uneven constitution and expression of financialisation (**Marshall, Pike, Pollard**) and its effects on financial intermediaries, labour markets, institutions, firms (**Marshall, Pike, Pollard**), households and governmentality (**Stenning** 155105). A fourth theme is developing an evolutionary geographical political economy that critiques both mainstream evolutionary economic geography and global production network (GPN) literatures (**Dawley, Mackinnon, Pike**). Through this approach, we are at the forefront of debates regarding urban/regional resilience to disruptive change (**Dawley, Mackinnon, Pike**), path creation (**Dawley**) and the labour market evolution of the UK's second tier cities (**Champion, Coombes**).

Geographies of Social Change (GSC) Bonnett, Champion, Coombes, Dawley, Hopkins, Jarvis, Laurie, Lin, Nayak, Stenning

Newcastle has one of the UK's largest cohorts of social geographers, united by concerns with geographies of social justice and (in)equality. One significant strand of work explores recession and austerity, conceptualising how communities of race, faith, locality and generation – amongst others – live with and contest the policies and experiences of social, political and economic change. Much of this work is collaborative and participative (e.g. **Jarvis'** work in Christiana, Denmark) and has been developed with diverse partners and communities in China, Denmark, Nepal, parts of Latin America, Poland and the UK. Research has informed policy debates around migration, trafficking, citizenship, asylum, volunteering, community, health and faith at a variety of scales, often through collaborative research with organisations (e.g. anti-trafficking NGO Shakti Samuha in Nepal, the Scottish Government, Voluntary Service Overseas (VSO) and the Forestry Commission). A second core theme is geographies of religion, race and migration, including work on urban nostalgia as an awkward and unacknowledged feature of radical imagination (**Bonnett** 170641, 156413), race, emotion and affect (**Nayak**), youthful Muslim/Asian masculinities (**Hopkins**), youth, religion and volunteering (**Hopkins, Laurie**) and Polish migration to the UK (**Champion, Coombes, Dawley** (18197), **Stenning**). A third thematic focus has demonstrated how education, employment, family, citizenship, international development and global media articulate with youth, generation, faith and especially gender to shape lives and spaces. Feminist methods inform research exploring the complex gendered geographies of cities, workplaces and bodies in a range of locations (**Laurie** on the co-production of knowledge with post-trafficked women, **Jarvis** on co-housing and social reproduction, **Hopkins** (1411) on Muslim masculinities and **Stenning** on the transformation of gender in Poland). A fourth focus is on geographies of communities and cities, bringing together research that interrogates the meaning and value of communities, be they urban, imagined and/or digital. This includes provocative work by **Jarvis** on intentional communities, **Laurie's** (170781) work on care for distant strangers through international volunteering, which challenges ideas about the creation of community, **Bonnett** (156413) on nostalgia and community and **Lin's** innovative work on neogeographies and urban landscapes in China that combines issues of publics, governance, participation and volunteered geographic information. A strength of the cluster, enhanced by **Lin's** appointment, is its capacity for methodological innovation. Examples include household resource approaches (**Jarvis** on school choice), psychosocial methods (**Stenning** on relationships in recession) and geovisualisation and sound maps (**Lin** on sensory access to space).

Power, Space, Politics (PSP) Bonnett, Hopkins, Laurie, Manzo, McConnell, Megoran, Williams, Woodward

This cluster has grown in size and influence and a strategic priority has been to establish itself as a significant international hub for scholarship that is extending the boundaries of geopolitical theory and practice. **Megoran's** highly original work reveals how Central Asia has been made knowable to UK-US audiences; **McConnell's** work on Tibet sets a fresh conceptual and empirical agenda on stateless sovereignty; **Williams'** ESRC-funded work challenges prevailing 'view-from-above' conceptions of vertical geopolitics; **Hopkins'** AHRC funded work on everyday and feminist geopolitics identifies the practices of re-scaling geopolitics below the state level and **Manzo's** work provides new methods for critiquing geopolitical representations. A second, very distinctive,

strength is our work on military geographies. **Williams'** work on airspace identifies the verticality and performativity of power projection, while **Woodward** has set agendas on military and post-military landscapes, military identities, textual and visual self-representations and extended understanding of the spatialities, experiences and power dynamics of militarism and militarisation. A third strand of research has re-conceptualised political spaces and spatialities, including **Bonnett's** (139812) work on the politics of the left. **Hopkins, Laurie, McConnell, Megoran** and **Williams** are all problematizing the scales at and networks through which the political operates. A fourth area of research – and point of interaction with our economic-geographical expertise – concerns governance issues within postcolonial encounters, e.g. **Laurie** on post-trafficked women in Nepal and indigenous politics in the Andes, **McConnell** on the Tibetan Government in exile, and **Manzo** on sport in Africa. A significant development in the cluster has been its championing of geographies of peace, led by **Megoran** (British Academy and an RGS-IBG plenary) and **McConnell**, engagements with peace studies and debates about geographies of religion and peace. There are strong synergies here with work on geographies of religion in our GSC cluster (**Hopkins, Laurie**) and **Pollard's** work on Islamic finance.

Future Strategy

Our strategy over the next five years is to enhance our sustainability in carrying out high quality, internationally recognised research with significant impact that contributes to the vitality of geography as a discipline. We will pursue this through the following inter-related activities: (1) increasing research grant and University funding that supports research infrastructure and capacity. We will continue to prioritise funding from RCUK sources (see section d); (2) consolidating and expanding on our existing strengths in research that is both high quality and has significant impact. To this end we will seek to extend and diversify research partnerships and income sources that afford pathways to delivering impact; (3) extending our international collaborative networks; (4) maximising the production of research that is conceptually fresh and original, empirically rigorous and of international significance; (5) making new strategic appointments, including ECRs, in priority research areas to offset anticipated staff retirements and to maintain the range and quality of our research.

We are already some way to achieving these objectives. Our improving success rates with RCUK funders (see section d) means that we have significant RCUK monies 'banked' for the next review period, with major bids pending across all clusters. Thematic priorities are being oriented to Newcastle University's three 'Societal Challenge Themes'. These themes of *Ageing and Health*, *Sustainability* and *Social Renewal* emerged in the REF period to become significant in orientating our work with others in and beyond the University. Key strands of future work on *sustainability* include **Pike's** development of sustainable models for urban infrastructure financing as part of the £3.5 million EPSRC-ESRC i-BUILD programme; **Hughes'** work on forms of ethical consumption in the global south (ESRC-funded and the theme of a *Geoforum* inaugural Workshop); **Marshall** and **Pollard's** work on socially responsible financial innovations including Islamic and micro-financial networks; **Dawley, Mackinnon** and **Pike's** research on adaptive regional capacities through international collaborative work on the offshore wind industry (ESRC/DFG/NSF) and **Manzo's** work developing collaborative networks to explore the geopolitics of bio-fuels. Bridging concerns of *sustainability* and *social renewal*, a suite of initiatives being developed includes work on South-South volunteering with VSO (**Laurie**), research exploring the changing roles and values of military personnel as new development actors (**Laurie, Woodward**), as University Service Unit participants (**Williams, Woodward**) and as Reservists (**Woodward**) and **Lin's** new EPSRC funded network will incorporate online social networks into hydrodynamic modelling for flood prediction and management. In Physical Geography, strategic lines of development include: expanding the spatial and temporal range of research on Asian monsoon variability and tropical climate change using ocean (IODP **Henderson**) and lacustrine (NERC-Lake Suigetsu, **Pearson**) palaeoclimate records; using newly developed high performance computer processors for landscape evolution modelling (**Maddy**) and developing Bayesian methods, structural equation modelling and lake physical models for palaeoenvironmental reconstruction (**Juggins**); strengthening our polar palaeoenvironmental, glaciological and landscape evolution research in the Arctic and Antarctic (**Henderson, Pearson, Mériaux, Ross, Russell**); understanding climate influences on human evolution, innovation and dispersal in East Africa (NERC ICDP **Pearson**); applying cosmogenic

isotope techniques to a range of landscape evolution questions (e.g. deglaciation chronology in NE Iceland **Mériaux, Russell**) and expanding policy and pedagogic impact, e.g. new diatom-based rapid water quality surveillance methods (**Juggins**), better understanding of the dynamics and impacts of intense rainfall-induced floods (NERC-SINATRA **Russell**) and climate modelling capabilities through *ClimatePrediction.net* and *ClimateEducation.net* (**Yamazaki**). Future outputs already in press/under contract include **Laurie** (*International Volunteering and Development: More than the Gap Year*, Zed), **Pike** (*Origination: The Geographies of Brands and Branding*, Wiley-Blackwell RGS-IBG Book Series) and major Handbooks (e.g. Martin and **Pollard's Handbook of the Geographies of Money and Finance**, Edward Elgar). We are also leading on major University initiatives to strengthen and consolidate interdisciplinary research capacity which also provide a platform for extending our international collaborative networks (see section e).

c. People, including:

i. Staffing strategy and staff development

People are our most important research assets and we invest considerable resource to enable them to fulfil their creative, intellectual and professional potential and to sustain and develop our community within and beyond the university. Since 2008, our strategy has focused on recruiting new researchers (**Henderson, Lin, McConnell, Ross, Williams, Yamazaki**) to address strategic research priorities (e.g. **Lin** and **Yamazaki's** appointments in GIS and climate modelling respectively) and to enhance our sustainability as we address retirements (Newson), staff secondment to senior university roles (Gillespie, **Marshall**, Stevenson) and moves out of conventional academic posts (Henry). We have recruited one new chair (**MacKinnon**) and have achieved considerable success with promotions: 6 staff to SL, 4 to Readerships and 8 to Chairs. We consider this evidence of our supportive research environment. Our age profile poses no difficulties for the sustainability of our research, and we have staff at all career stages. We continue our engagement with, and support of, Emeritus staff (**Champion, Goddard**), who continue their international research leadership and engagement with public policy and have significant mentoring roles. All new academic staff are given an induction programme, a designated mentor and bespoke training in a range of areas including PhD supervision, ethics procedures and research grant writing. We have a transparent workload model that protects 40% of staff time for research and provides reduced and graduated teaching and administrative loads for the first three years for ECRs. Each member of staff has an annual Performance Development Review (PDR) and a meeting with the Director of Research reviewing their research plans. Staff are entitled to research leave (one semester in every eight), conditional upon a clear research plan, teaching cover and an end of leave report. We also provide year-long periods of leave for staff who have had especially onerous management roles. Staff have £1300 per annum in School funds for conference travel and up to £10k from Faculty/School to pump-prime research and to host overseas scholars. Staff also have Personal Research Accounts (PRAs) funded from grant overheads, Faculty incentive monies and consulting fees, all of which can be used to explore and develop new ideas and research-related activities.

Six staff have had leadership training/personal coaching (e.g. Newcastle's 'Unpacking Your Chair' programme, recognised in the Times Higher Awards) to support their promotion into senior roles. We are proud of our longstanding record of nurturing junior and contract researchers and managing their transition into lecturing (e.g. **Williams**) and CURDS continues to nurture Research Associates and produce ECRs who move into senior positions (27 former CURDS staff hold Chairs in regional development and economic geography). We continue our long held policy of strategically appointing Visiting Fellows (31 in this review period) who facilitate new collaborations, act as conduits for engagement and impact and support career development. Prestigious Fellowships awarded in this review period include British Academy (**Megoran**), Leverhulme Emeritus Fellowship (**Goddard**) and ESRC (**McConnell** 1 year Post-Doctoral; **Williams** 3 year Research Fellowship).

ii. Research students

We regard our graduate school as a benchmark of the quality, vitality and sustainability of our research culture and practice. In this review period we have supervised 47 successful PhD completions (36.61 FTE), grown our average annual research student numbers to 49.6 and

increased our average FTE completions per annum by 16%. Our sustained excellence in postgraduate training now feeds into and is supported by the North East DTC (NEDTC), in collaboration with Durham. The NEDTC emerged from rigorous peer review and guarantees a minimum of 28 funded studentships annually in social sciences (2011-15, > £9million), including a pathway dedicated to Iberian and Latin American Studies. **Marshall** led the DTC application and is the inaugural Director of the NEDTC. Recruitment and selection use ESRC Open Competition criteria and are highly competitive. In the first 2 years of the NEDTC, Geography secured 13 studentships, over 20% of the total available across all social science outlets in Newcastle and Durham. We have also secured PhD funding from AHRC, NERC and EPSRC, in addition to Faculty and GPS scholarships. Future PGR support is enhanced through (i) the AHRC funded Northern Bridge Doctoral Training Partnership (NBDTP, with Durham, Queen's University Belfast, £11.2 million (157 studentships) 2013-18) and (ii) the NERC funded IAPETUS Doctoral Training Partnership (IDTP with Durham, Glasgow, St Andrews, Stirling, the British Geological Survey and the Centre for Ecology and Hydrology, £5m (60 studentships) 2014-19). Our PhD pathways are fed from ESRC-accredited PGT programmes — *Latin American Interdisciplinary Research*, *Human Geography Research*, *Local and Regional Development Research* — while our MA in *Local and Regional Development* is offered on a FT/PT basis for researchers and practitioners and has been a key mechanism for knowledge transfer. School bursaries for MA students have helped support successful transitions from PGT to PGR pathways and our PGT provision expanded in 2013 with a new cross-disciplinary *Regional Development and Spatial Planning* MA (with the School of Architecture, Planning and Landscape).

PGR numbers are growing and our cohort is diverse in terms of gender, geography, and social background. We pair ECRs with experienced supervisors to build their experience of PhD supervision and the University's code of practice requires two (or more) supervisors for each PGR student. Students meet with their supervisors at least 10 times a year and have an Annual Progress Review undertaken by 2 members of staff outwith the supervisory team. All our postgraduates belong to one or more of our clusters and present their work and attend reading groups, seminars and conferences. Many of our PGRs undertake closely monitored and supported undergraduate teaching. Postgraduates are supported (up to £200 per year) to attend conferences, workshops and training and regularly secure academic posts (e.g. Burgoine to Cambridge, Marques to Kiel), present at international conferences (e.g. RGS-IBG, AAG, RSA), submit articles to peer-reviewed international journals and achieve recognition (e.g. Carnaffan's award from Peru's Institute for Travel and Tourism for her PhD on responsible, homestay tourism). We have also been successful in securing School Research Committee funding to support staff to undertake fieldwork which also involves PGR supervision.

The NEDTC, NBDTP and IDTP allow us to deepen our long tradition of working closely with public, private and charitable organisations across the region and nurturing our PGRs into senior impact and policy roles around the globe (e.g. Jacqui Cotton oversees the Environment Agency's Incident Management and Community Engagement programme, Justine Coulson is Director of Marie Stopes International (a reproductive health charity) in Nepal and Jon Edwards is Research Manager in the European Commission's Research Centre in Seville). These RCUK funded training partnerships also strengthen our ability to sustain and enhance our long held tradition of building capacity with new and diverse collaborative partners for PhD studentships (e.g. Newcastle City Council, the Scottish Refugee Council, the National Maritime Museum, VSO and the Campaign for Real Ale).

d. Income, infrastructure and facilities

Our priority is to generate external research funding to support significant and intellectually rigorous research with academic and societal impact. A strategic priority since 2008 has been to target RCUK monies to enhance the development of our clusters and their defined priorities in a period when numerous sources of research funding have dwindled. To achieve this we reviewed and enhanced a number of support mechanisms to facilitate the development of external applications. These include: internal peer review of applications; costing and administrative support; monthly 'drop-in' sessions with the School Research Manager; 'best practice' workshops on submitting grant applications and sharing examples of successful applications; increased monitoring and advice through PDR to raise both performance and expectations and School and

Environment template (REF5)

Faculty level incentivisation for RCUK grant applications and funding schemes (see below). As a result, in a total spend of £3.79m, our RCUK spend has increased to £2.42m (63.8% of spend as compared with 18.7% in RAE2008). This includes particular success with ESRC and EPSRC; our ESRC and EPSRC success rates (30% and 50% respectively) were significantly above the national average for 2011-12 (17% and 41%). RCUK income is well spread with 25 awards in total, held by 23 different staff, including 6 NERC-funded projects. The Lake Suigetsu research was funded by NERC (**Nakagawa, Pearson**) and also German (DFG) and Japanese (MEXT) research councils and formed part of an increasingly research-council oriented spend (>76% of all spend) in Physical Geography.

Significantly, our improving success rates have already secured over £1.6 million in RCUK monies for spend in the next review period, underpinning the viability of our future research plans. Major awards include **Hopkins** (AHRC) on everyday geopolitics, **Pearson** (£1.2M NERC 2013-2016) supported by the International Continental Drilling Project, DFG (Germany) and NSF (USA) on climate driven human evolution, **Pike** (EPSRC-ESRC) on infrastructure finance, **Megoran** (ESRC) on rising powers in Central Asia, **Williams** and **Woodward** (ESRC) on University Armed Service Units and **Jarvis** (EPSRC) on wellbeing, ageing and mobility. **Russell** heads the 'Flood Action Team' on the £2.7M NERC-funded SINATRA (Susceptibility of catchments to INTense RAInfall and flooding) consortium project (2013-17).

In addition to RCUK monies, other sources of income are diverse (39 different providers) and reflect our strategy of developing partnership models of research which provide high quality outcomes and conduits for impact. In addition, we have successfully applied for funding from various small bids funds at University, Faculty and School-level. In addition to incentivisation monies for grant applications during this review period (£24.5k to Geography), staff secured over £56k to support REF-related research and writing preparation and £19k from Faculty and School Research Committee in small grants. Other forms of income, salary support and other support in kind have been secured by successful bids to the Vice Chancellor's Strategic Fund (£245K in this review period) and inter-disciplinary research groups – *Military, War and Security* (MWS) and *Finance and Financial Law* (FFL) – which have an annual budget from Faculty. We are also securing new channels of funding for research staff through our involvement with key thematic priorities in the *Newcastle Institute for Social Renewal*, who now fund 1 FTE researcher based in CURDS.

The School's Research Committee (SRC) meets monthly to decide School research strategy and manage the allocation of resources. Geography has its own Research Directors for Human and Physical Geography who are members of SRC and work with the Head of Geography, Research cluster leaders and our PGR Director to steer Geography research. These arrangements for research management are in turn nested within Faculty and University research support structures: Faculty Research Strategy Group monitors and promotes research activity throughout the Humanities and Social Sciences and reports to the University Research Committee (URC) which sets general research policy and reviews and provides feedback on research performance. As a designated University Research Centre, CURDS provides dedicated space and research support for 15.5 FTE (including HEFCE funded and other research staff). Research Centre status at Newcastle is selective and thus CURDS attracts regular University reviews — with diverse external assessors (who range from former RAE panel members to senior international policy makers) — to feed back on key research achievements, strategic direction and priorities.

The Faculty of Humanities and Social Sciences has an Higher Education Academy award winning postgraduate research training programme that provides both disciplinary and generic research training within an interdisciplinary and multi-cultural learning environment – dovetailing modules with our ESRC-recognised research training MA programmes in *Human Geography* and *Local and Regional Development* within the NEDTC. This wide-ranging programme provides the epistemological and methodological research skills to enable PGR students to complete their doctorates successfully, fosters research collaboration and communication amongst PGRs across the Faculty and is the foundation for the ESRC-funded NEDTC. ESRC reviewers of the DTC bid highlighted Newcastle's investment in state-of-the-art facilities for PGRs, including dedicated

administrative staff. In addition to this Faculty investment, the School funds an annual (3 day) Prato workshop on *Writing and Publishing* for selected PGR students.

The School also supports research by making significant use of closely mentored Teaching Fellows and Teaching Assistants. We also provide our PGRs with opportunities for Research Assistant work, building their capacity and sustaining and developing our research skills base. Staff are supported with training and advice from the University's Staff Development Unit as requested and we provide specialist software for staff undertaking advanced quantitative methods research. Physical Geography research is supported by two Physical Geography technicians and our laboratories include two world class facilities for cosmogenic isotope and palaeoecological analysis (equipped for bio-marker research). Support is also provided for costs associated with open access publication in prestigious journals, to facilitate immediate and total public access to significant staff outputs.

e. Collaboration or contribution to the discipline or research base

Collaborations nationally and internationally both within and across disciplines are central to our strategy and the influence of our research. The School of GPS promotes research collaboration amongst its three constituent units and significant intra-school intellectual centres of gravity have developed in Critical Geopolitics (with Politics) and Visualities (with Sociology). Our clusters are purposely porous and we have used them to promote Geography in wider university and regional structures to build interdisciplinary agendas. Our location in an interdisciplinary School has supported our strategy and geographers have been at the forefront of developing and leading significant institutional interdisciplinary initiatives: **Laurie** founded the *Developing Areas Research Network* (Newcastle, Durham, Northumbria), has long been active in the *Americas Research Group* and now heads a bid to establish a new Centre for Latin American and Caribbean Studies (CeLACS) to co-ordinate research across social sciences, humanities, health and engineering; **Williams** founded and leads the Faculty-level research group on *Military, War and Security* (MWS); **Pollard** is co-director of the new *Finance and Financial Law Research Group* that consolidates finance-related research across the North East region and we also work in other University-wide groups including the *Gender Research Group* and the *Postcolonial Research Group*. **Stenning** was a partner in the *Centre for Russian, Central and East European Studies* (HEFCE/ESRC/AHRC Centre of Excellence) and **Pike** is a partner in the interdisciplinary *Spatial Economics Research Centre* (ESRC/BIS/CLG/WAG) and the new *What Works Centre in Local Economic Growth* (ESRC/Cabinet Office, 2013). CURDS works with an International Advisory Panel, with members from 12 countries, who advise on research strategy and help disseminate our research.

Deepening collaboration and interdisciplinarity is also evident across a range of projects oriented to Newcastle University's 'Societal Challenge Themes'. These themes of *Ageing and Health*, *Sustainability* and *Social Renewal* are increasingly significant in orientating our work with others in and beyond the University. For the *Social Renewal* theme, **Megoran** heads Northumbria and Newcastle Universities' Martin Luther King Peace Committee (established 2012). For the *Sustainability* theme, **Pike** is Deputy Director of the £3.5 million EPSRC/ESRC i-BUILD Research Centre exploring sustainable financing for urban infrastructure. **Lin**, an ECR, has recently secured EPSRC funding as part of a new *Sustainable Society* network which explores the possibilities of incorporating online social networks into hydrodynamic modelling for flood prediction and management.

Also important in building research capacity in Geography and beyond, we have acted as External Examiners for 59 PhD theses in 10 countries during the review period. Our integration into the NEDTC and the new NBDTP and IDTP has improved the co-ordination of postgraduate recruitment and monitoring and encouraged inter/intra-institutional joint supervision (e.g. Civil Engineering/Geosciences, Modern Languages, Durham, Northumbria). Our Research Training Programme engages our PGRs with their peers from 10 UoAs at Newcastle and Durham to learn from different research cultures and methodologies. Geographers have been active in designing and delivering these programmes. For example, the NEDTC has supported 3 new Advanced Training Courses: *International Fieldwork*, *Writing Across Boundaries*, and *Visual Methodologies*:

Laurie established and leads the *International Fieldwork* training. These courses attracted 141 PhD researchers from across the UK in the first 2 years of their operation. Geography and CURDS also run internal and external seminar programmes where postgraduates, academics and policy makers can foster dialogue, learning and creativity. Our prestigious Tyneside Geographical Lecture Series, started in 1947, attracts speakers and audiences from a wide range of backgrounds. CURDS was also commissioned by ONE North East (2009-11) to run a series of international workshops (*Regional Insights*, 2009-11, attracting over 600 delegates) that helped to build the evidence base for the North East Strategy.

Staff have delivered 67 invited and funded keynote lectures in 12 countries and held a total of 22 invited Visiting Scholar/Professorship positions in 11 countries, with 31 Visiting Fellows/Professors appointed in Geography at Newcastle. Staff at all career stages contribute in many important ways to the research base and communities in their specific fields, be it working with Research Councils and publishers, or undertaking examining and advising on promotions and career progression. Our research excellence, including that of junior colleagues, includes the following:

Awards and Prizes:

Champion (inaugural Lifetime Achievement Award, RGS-IBG Population Geography Research Group 2013); **Goddard** (Lord Dearing Lifetime Achievement Award for Higher Education, 2012; Sir Peter Hall Award, Regional Studies Association, 2011; Honorary Fellowship, University College London, 2010); **Hopkins** (RGS-IBG Gill Memorial Award); **Pike** (2 Regional Studies Association Best Book awards); **Nakagawa** (Daiwa Adrian Prize 2013).

Journal and Book Series Editing: **Hopkins** edits an Ashgate Book Series on *Gender, Space and Society* and has graduated from Editor to Editor in Chief of *Gender, Place and Culture*. *Area* (**Bonnett**), *Regional Studies* (**Coombes, Marshall, Pike**) and *Urban Studies* (**Mackinnon**) are/have been edited from Newcastle in this review period.

Editorial Board Memberships: staff have held positions on 19 editorial boards including: *Annals of the Association of American Geographers*, *Environment and Planning A*, *European Urban and Regional Studies*, *Journal of Economic Geography*, *Journal of Palaeolimnology*, *Quaternary Science Reviews*, *Sociology* and *Transactions of the Institute of British Geographers*. **Hughes** is on the RGS-IBG Book Series Editorial board.

Contribution to Professional Associations:

(i) *Research Councils:* **Laurie** and **Pollard** were commissioned to write the 'Development' and 'Economic Geography' submissions for the ESRC Benchmarking of Human Geography; staff have held positions on peer review colleges for NERC (**Henderson, Russell**), AHRC (**Hopkins**) and ESRC (**Jarvis, Pike, Williams, Woodward**). Staff are invited expert assessors for the following international research councils: Australian Research Council (**Pike**), European Research Area and Portuguese Research Council (**Hopkins**); Norwegian Research Council (**Laurie**); European Science Foundation (**Russell**); National Science Foundation (USA) and Social Science and Humanities Research Council (Canada) (**Pollard**).

(ii) *Learned Societies:* *RGS-IBG Research Groups:* **Hopkins**, co-founder/Chair Geographies of Justice Research Group; **Hughes**, Chair Economic Geography Research Group; **Laurie**, Secretary Developing Areas Research Group; **McConnell**, Committee Member Political Geography Research Group; **Williams**, Treasurer and now Vice-Chair Political Geography Research Group. *Other Associations:* **Champion** was elected Vice-President and then President *British Society for Population Studies*; **Goddard** elected to the Council of the Academy of Social Sciences; **Hopkins** was co-Chair, Geographies of Religions and Belief Systems Speciality Group AAG; **Laurie** is a Committee Member *Society of Latin American Studies*; **Juggins**, Member of Council *International Society for Diatom Research*.

Seminar series and conferences: We have hosted (i) major international conferences on behalf of Learned Societies (e.g. Regional Studies Association *Annual Conference 2011*); (ii) International Conferences to develop new disciplinary agendas (e.g. *Geographies of Religion: a new dialogue* 2009); (iii) international policy workshops (e.g. Regional Insights for ONE North East 2009-11); (iv) ESRC seminar series (e.g. **Hopkins, Laurie**); (v) Quaternary Research Association Annual Discussion Meeting 2013 (**Juggins, Pearson**); (vi) RGS-IBG Research Group conferences (e.g. Political Geography Research Group conference 2011, Economic Geography Research Group Conference 2012); (vii) Geography and CURDS seminar series including the Tyneside Geographical Lecture (viii) events for local schools; (ix) events for *Stop the War* and others.